



# **TEST REPORT**

**Test Report No. : UL-EMC-RP10809253JD01A V5.0**

**Manufacturer** : Aava Mobile Oy

**Type of Equipment** : Tablet PC

**Model No.** : INARI10-LTDN-2 incorporating Sierra Wireless Module EM7355

**FCC ID** : 2ABVH-INARI102

**Test Standard** : 47CFR15.107, 47CFR15.109

**Test Result** : Complied

## **Version 5.0 Supersedes All Previous Versions**

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.

**Date of issue:** 07 September 2015

**Checked by:**

Graeme Morris  
Engineer

**Issued by :**

John Newell  
Quality Assurance Manager



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## 1. CUSTOMER DETAILS



<b>Company Name:</b>	Aava Mobile Oy
<b>Address:</b>	Nahkatehtaankatu 2 90130 Oulu Finland



## 2. SUMMARY OF TESTING

### 2.1. Test Specification

Reference:	47CFR15.107 and 47CFR15.109
Title:	Code of Federal Regulations - Title 47 (Telecommunication) 2010: Part 15 (Radio Frequency Devices) - Subpart B (Unintentional Radiators) - Sections 15.107 and 15.109
Site Registration:	209735

### 2.2. Summary of Test Results

Reference	Measurement Type	Applicability	Result
EMISSIONS			
15.109	Radiated Emissions (Enclosure)	Yes	
15.107	Conducted Emissions (AC Mains Input / Output Ports)	Yes	

KEY:  = Complied  = Did not comply

### 2.3. Location of Testing

All the measurements described in this report were performed at the premises of UL VS Ltd, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire RG24 8AH.

### 2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above, nor from the requirements defined in the basic standards called up within it.

### 3. EQUIPMENT UNDER TEST (EUT)

#### 3.1. Description of EUT

The EUT was a 10.1 inch tablet PC with cellular, Wi-Fi, Bluetooth, NFC and GPS connectivity.

#### 3.2. Identification of Equipment under Test (EUT)

ID#	Description	Brand Name	Model No	Serial No	IMEI	SVN
E1	Tablet PC	Aava Mobile Oy	INARI10-LTDN-2 <sup>1</sup>	BB44102116	356196050942545	18
E2	AC/DC Adapter	Delta Electronics Inc.	ADP-10BW B	05GW44G01N7	Not Applicable	

NOTES:

1: The EUT incorporated Sierra Wireless module EM7355.

#### 3.3. Port Identification

Port	Description	Possible Length	Type	Connector
P1.1	Enclosure of Tablet PC	Not Applicable	Enclosure	Not Applicable
P1.2	Micro-SD	Not Applicable	Signal/Control	Micro-SD
P1.3	Charging Only	0.7 m	DC Power	Micro-USB Type B
P1.4	USB 2.0	Refer to Note 1	Signal/Control/DC Power	USB Type B
P1.5	Headphones	Refer to Note 1	Signal/Control	3.5 mm Jack
P1.6	Docking Station Adapter	Refer to Note 1	Signal/Control	Proprietary
P2.1	Enclosure of AC/DC Adapter	Not Applicable	Enclosure	Not Applicable
P2.2	DC Power Output	0.7 m	DC Power	USB Type B

NOTES:

1: The customer was unable to provide suitable port terminations; therefore this port was unterminated during the course of testing.

#### 3.4. Operating Modes

Mode Reference	Definition
Allocated	<p>The Tablet PC was synchronised with a radio communication tester and allocated a channel in the GSM 850 operating band. The Wi-Fi radio was active, but not connected to a network.</p> <p>The Tablet PC display was configured to display a pattern of scrolling white 'H' symbols on a black background.</p> <p>The Tablet PC was charging via the AC/DC Adapter, which was powered by a 120 V 60 Hz supply.</p>
Idle	<p>The Tablet PC was synchronised with a radio communication tester but not allocated a channel in the GSM 850 operating band. The Wi-Fi radio was disabled.</p> <p>The Tablet PC display was configured to display a pattern of scrolling white 'H' symbols on a black background.</p> <p>The Tablet PC was charging via the AC/DC Adapter, which was powered by a 120 V 60 Hz supply.</p>

#### 3.5. Radio Characteristics - GSM

GSM Bands:	Rated Output Power (dBm)	Transmit Frequency range (MHz)	ARFCN	Transmit Frequency (MHz)	Receive Frequency range (MHz)	ARFCN	Receive Frequency (MHz)
GSM 850	33	824-849	190	836.6	869-894	190	881.6
PCS 1900	30	1850-1910	660	1879.8	1930-1990	660	1959.8
<b>Supported Technologies e.g. Circuit Switched Voice/Data, Packet Switched Data GPRS/ EDGE</b>		Circuit Switched Voice/Data, Packet Switched Data GPRS/ EDGE					

**3.6. Radio Characteristics - UMTS**

UMTS Bands:	Rated Output Power (dBm)	Transmit Frequency range (MHz)	Receive Frequency range (MHz)
Band I	24	1920-980	2110-2170
Band II	24	1850-1910	1930-1990
Band IV	24	1710-1755	2110-2155
Band V	24	824-849	869-894
Band VIII	24	880-915	925-960
<b>Supported Technologies: Circuit Switched Voice / Data HSDPA HSUPA</b>		Data HSDPA HSUPA	

**3.7. Radio Characteristics - LTE**

LTE Bands:	Rated Output Power (dBm)	Transmit Frequency range (MHz)	Receive Frequency range (MHz)
Band 1	23	1920-1980	2110-2170
Band 2	23	1850-1910	1930-1990
Band 3	23	1710-1785	1805-1880
Band 4	23	1710-1755	2110-2155
Band 5	23	824-849	869-894
Band 7	23	2500-2570	2620-2690
Band 8	23	880-915	925-960
Band 13	23	777-787	746-756
Band 17	23	704-716	734-746
Band 20	23	832-862	791-821
Band 25	23	1850-1915	1930-1995
<b>Uplink Rated Output Power (dBm)</b>		23	
<b>Uplink Modulation Scheme</b>		QPSK	
<b>Channel Bandwidth</b>		5, 10 MHz	

**3.8. Radio Characteristics - Bluetooth**

<b>Technology type</b>	Bluetooth
<b>Transmit Frequency Range (MHz):</b>	2402 to 2480
<b>Transmit Channel Tested (MHz):</b>	2402 to 2480 (Frequency Hopping Spread Spectrum)
<b>Rated Output Power (dBm):</b>	0
<b>Receive Frequency Range (MHz):</b>	2402 to 2480
<b>Receive Channel Tested (MHz):</b>	2402 to 2480 (Frequency Hopping Spread Spectrum)

**3.9. Radio Characteristics - 2.4 GHz Wi-Fi**

<b>Technology type</b>	2.4 GHz Wi-Fi
<b>Transmit Frequency Range (MHz):</b>	2400 to 2484
<b>Transmit Channel Tested (MHz):</b>	2472
<b>Rated Output Power (dBm):</b>	20
<b>Receive Frequency Range (MHz):</b>	2400 to 2484
<b>Receive Channel Tested (MHz):</b>	2472



**3.10. Radio Characteristics - 5 GHz Wi-Fi**

Technology type	5 GHz Wi-Fi
Transmit Frequency Range (MHz):	5160 to 5260
Transmit Channel Tested (MHz):	5180
Rated Output Power (dBm):	20
Receive Frequency Range (MHz):	5160 to 5260
Receive Channel Tested (MHz):	5180

**3.11. Radio Characteristics - NFC**

Transmit Frequency (MHz):	13.56
Rated Output Power (dBm):	10
Receive Frequency (MHz):	13.56

**3.12. GPS Radio Characteristics - GPS**

Receive Frequency Range (MHz):	1575.42
Receive Channel Tested (MHz):	1575.42

**3.13. Configuration and Peripherals**

Description:	Please refer to the Test Configuration and Photograph section for schematic drawing(s) and/or photograph(s) of the test configuration(s) employed in the course of testing.
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**3.14. Modifications**

NOTE: No modifications were made to the EUT during the course of testing.

**3.15. Additional Information Related to Testing**

Equipment Category:	Tablet PC
Intended Operating Environment:	Residential / Commercial
Intended Installation:	Table top / Hand Held
Cycle Time:	Less than one second.
Power Supply Requirement(s):	Tablet PC: 5 VDC AC/DC Adapter: 100 to 240 V AC, at 50 or 60 Hz
Weight:	Tablet PC: 700 g AC/DC Adapter: 54 g
Dimensions:	Tablet PC: 182 mm x 270 mm x 12 mm AC/DC Adapter: 60 mm x 55 mm x 23 mm
Antenna Type	Integral
Hardware Version Number:	Tablet PC: RU Wireless Module: 1.0, 1.1 AC/DC Adapter: Phihong PSA10R-050Q
Software Version Number:	Tablet PC: Windows Embedded 8.1 Industry Pro Build 9600 (module SWI9X15C_05.05.58.00) Wireless Module: SWI9X15C_05.05.58.00 AC/DC Adapter: Not Applicable
Highest Internally Generated Operating Frequency:	5260 MHz
FCC ID Number:	2ABVH-INARI102
Industry Canada Certification Number:	11875A-INARI102

## 4. SUPPORT EQUIPMENT

### 4.1. Identification of Support Equipment

Description	Manufacturer	Model No	Serial No
Radio Communication Tester	Rohde and Schwarz	CMU 200	836202/093

### 4.2. Interconnecting Cables

Cable Type	Shielded	Length (m)	Ferrite	Connection 1	Connection 2
Four-core	Yes	0.7	No	AC/DC Adapter	Tablet PC

## 5. MONITORING PERFORMANCE

### 5.1. Overview

No immunity tests were performed; therefore performance criteria were not applicable.

### 5.2. Monitoring EUT Performance during Testing

For the purposes of testing, the term “ <i>operate as intended</i> ” was defined as:	<b>Allocated:</b> The EUT remained synchronised with the radio communication tester and was allocated a channel in the GSM 850 operating band. The display continued to show a scrolling 'H' pattern. <b>Idle:</b> The EUT remained synchronised with the radio communication tester in the GSM 850 operating band. The display continued to show a scrolling 'H' pattern.
For the purposes of testing, an “ <i>unintentional response</i> ” was defined as:	Not Applicable
Method used to determine whether user control functions and stored data were lost after the EMC exposure:	Not Applicable
Method used to verify that a communications link was established and maintained (if appropriate):	The status of the communication link was indicated via the radio communication tester.
Method of assessment of level of performance or degradation of performance during and/or after EMC exposure:	Not Applicable

## 6. MEASUREMENT UNCERTAINTY

### 6.1. Overview

No measurement can ever be perfect and those imperfections give rise to error. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement regarding the uncertainty of approximation.

Note that compliance is determined solely upon the results of compliance measurements and does not take into account measurement uncertainties. The measurement uncertainty values quoted in this report are for information only as they do not influence the associated test results.

### 6.2. Method of calculation

The methods used to calculate the uncertainties included within this test report are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the United Kingdom Accreditation Service (UKAS) is followed.

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## 7. MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS

### 7.1. General Comments

7.1.1. This section contains the test result sheets for the measurements listed in Section 2.2.  
*Summary of Test Results* (above).

7.1.2. The measurement uncertainties stated in the test result sheets were calculated in accordance with documented best practice and represent a confidence level of 95%. Where only confidence level is given, it has been demonstrated that the relevant items of test equipment used meet the specified requirements in the standard with at least this level of confidence.

7.1.3. Please refer to Section 6. *Measurement Uncertainty* on page 12 for details of our treatment of measurement uncertainty.

**CONDUCTED EMISSIONS - TEST RESULTS**

This test is covered by the scope of UL VS's UKAS Accreditation under ISO/IEC 17025: 2005.

**GENERAL INFORMATION**

<b>JOB NUMBER:</b>	10809253JD01	<b>TEST SITE ID:</b>	Site 1
<b>EUT:</b>	INARI10-LTDN-2 and ADP-10BW B	<b>TEMPERATURE:</b>	25 °C to 26 °C
<b>TEST ENGINEER:</b>	Graeme Morris	<b>RELATIVE HUMIDITY:</b>	35 % to 35 %
<b>DATE OF TEST:</b>	18 Jun 2015	<b>ATMOSPHERIC PRESSURE:</b>	1020 mb to 1020 mb
<b>UNCERTAINTY:</b>	± 4.69 dB	<b>EQUIPMENT CLASS:</b>	Class B
<b>CATEGORY:</b>	Not Applicable	<b>MEASUREMENT METHOD:</b>	LISN (AC)

**TEST SPECIFICATION DETAILS**

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

**REFERENCE:** ANSI C63.4: 2009

**COMMENTS**

None

**DEVIATIONS FROM TEST SPECIFICATION**

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

**EUT RELATED**

**OPERATING MODE:** Idle

**FUNCTION(S) MONITORED:** Not Applicable

**MEASUREMENT RESULTS**

No.	Frequency (MHz)	Line	Detector	Level (dBµV)	Limit (dBµV)	Margin (dB)	Graph No.	Result
1	0.200	Live 1	Quasi-Peak	51.7	63.6	11.9	001	Complied
2	0.299	Live 1	Quasi-Peak	45.0	60.3	15.3	001	Complied
3	0.416	Live 1	Quasi-Peak	43.1	57.5	14.5	001	Complied
4	0.519	Live 1	Quasi-Peak	41.5	56.0	14.5	001	Complied
5	0.641	Live 1	Quasi-Peak	39.8	56.0	16.2	001	Complied
6	0.681	Live 1	Quasi-Peak	39.7	56.0	16.3	001	Complied
7	0.965	Live 1	Quasi-Peak	38.0	56.0	18.0	001	Complied
8	0.200	Live 1	Average (CISPR)	36.5	53.6	17.2	001	Complied
9	0.299	Live 1	Average (CISPR)	24.2	50.3	26.1	001	Complied
10	0.416	Live 1	Average (CISPR)	24.3	47.5	23.3	001	Complied
11	0.519	Live 1	Average (CISPR)	21.3	46.0	24.7	001	Complied
12	0.641	Live 1	Average (CISPR)	18.7	46.0	27.4	001	Complied
13	0.681	Live 1	Average (CISPR)	18.2	46.0	27.8	001	Complied
14	0.965	Live 1	Average (CISPR)	14.7	46.0	31.3	001	Complied
15	0.200	Neutral	Quasi-Peak	53.2	63.6	10.5	002	Complied
16	0.294	Neutral	Quasi-Peak	42.5	60.4	17.9	002	Complied
17	0.429	Neutral	Quasi-Peak	40.7	57.3	16.6	002	Complied
18	0.528	Neutral	Quasi-Peak	42.3	56.0	13.7	002	Complied
19	0.600	Neutral	Quasi-Peak	40.9	56.0	15.1	002	Complied
20	0.749	Neutral	Quasi-Peak	40.7	56.0	15.3	002	Complied
21	0.857	Neutral	Quasi-Peak	39.7	56.0	16.3	002	Complied
22	0.200	Neutral	Average (CISPR)	38.9	53.6	14.7	002	Complied
23	0.294	Neutral	Average (CISPR)	24.3	50.4	26.2	002	Complied
24	0.429	Neutral	Average (CISPR)	19.0	47.3	28.2	002	Complied
25	0.528	Neutral	Average (CISPR)	20.6	46.0	25.4	002	Complied
26	0.600	Neutral	Average (CISPR)	18.7	46.0	27.3	002	Complied
27	0.749	Neutral	Average (CISPR)	16.9	46.0	29.1	002	Complied
28	0.857	Neutral	Average (CISPR)	14.4	46.0	31.6	002	Complied

**TEST EQUIPMENT USED**

UL ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL
K0001	5 m Semi-Anechoic Chamber	N/A	19 Mar 2016	12
M1273	20 Hz to 26.5 GHz EMI Test Receiver	ESIB 26	19 Mar 2016	12
A1829	N-Type Pulse Limiter	ESH3-Z2	26 Mar 2016	12
C1419	3 m RF Cable	239-0088-3000	26 Mar 2016	12
A004	Single phase LISN	ESH3-Z5	27 Nov 2015	12
C1416	3 metre RF cable	239-0088-3000	21 Jan 2016	12
A2512	CMU 200 Radio Communication Tester	CMU 200	Calibration not required	N/A

## CONDUCTED EMISSIONS - TEST RESULTS

This test is covered by the scope of UL VS's UKAS Accreditation under ISO/IEC 17025: 2005.

### GENERAL INFORMATION

<b>JOB NUMBER:</b>	10809253JD01	<b>TEST SITE ID:</b>	Site 1
<b>EUT:</b>	INARI10-LTDN-2 and ADP-10BW B	<b>TEMPERATURE:</b>	26 °C to 26 °C
<b>TEST ENGINEER:</b>	Graeme Morris	<b>RELATIVE HUMIDITY:</b>	35 % to 35 %
<b>DATE OF TEST:</b>	18 Jun 2015	<b>ATMOSPHERIC PRESSURE:</b>	1020 mb to 1020 mb
<b>UNCERTAINTY:</b>	± 4.69 dB	<b>EQUIPMENT CLASS:</b>	Class B
<b>CATEGORY:</b>	Not Applicable	<b>MEASUREMENT METHOD:</b>	LISN (AC)

### TEST SPECIFICATION DETAILS

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

<b>REFERENCE:</b>	ANSI C63.4: 2009
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### COMMENTS

None

### DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

### EUT RELATED

<b>OPERATING MODE:</b>	Allocated
<b>FUNCTION(S) MONITORED:</b>	Not Applicable



**MEASUREMENT RESULTS**

No.	Frequency (MHz)	Line	Detector	Level (dBµV)	Limit (dBµV)	Margin (dB)	Graph No.	Result
1	0.150	Live 1	Quasi-Peak	45.2	66.0	20.8	003	Complied
2	0.150	Live 1	Quasi-Peak	45.2	66.0	20.8	003	Complied
3	0.294	Live 1	Quasi-Peak	42.0	60.4	18.4	003	Complied
4	0.420	Live 1	Quasi-Peak	42.6	57.4	14.9	003	Complied
5	0.533	Live 1	Quasi-Peak	41.1	56.0	14.9	003	Complied
6	0.636	Live 1	Quasi-Peak	40.5	56.0	15.5	003	Complied
7	0.749	Live 1	Quasi-Peak	40.4	56.0	15.6	003	Complied
8	0.150	Live 1	Average (CISPR)	18.4	56.0	37.6	003	Complied
9	0.150	Live 1	Average (CISPR)	18.6	56.0	37.4	003	Complied
10	0.294	Live 1	Average (CISPR)	24.5	50.4	25.9	003	Complied
11	0.420	Live 1	Average (CISPR)	24.3	47.4	23.2	003	Complied
12	0.533	Live 1	Average (CISPR)	20.7	46.0	25.3	003	Complied
13	0.636	Live 1	Average (CISPR)	17.8	46.0	28.2	003	Complied
14	0.749	Live 1	Average (CISPR)	16.9	46.0	29.1	003	Complied
15	0.200	Neutral	Quasi-Peak	53.1	63.6	10.5	004	Complied
16	0.308	Neutral	Quasi-Peak	42.7	60.0	17.3	004	Complied
17	0.425	Neutral	Quasi-Peak	41.9	57.4	15.5	004	Complied
18	0.497	Neutral	Quasi-Peak	42.7	56.1	13.3	004	Complied
19	0.681	Neutral	Quasi-Peak	40.5	56.0	15.5	004	Complied
20	0.749	Neutral	Quasi-Peak	40.9	56.0	15.1	004	Complied
21	0.200	Neutral	Average (CISPR)	39.2	53.6	14.4	004	Complied
22	0.308	Neutral	Average (CISPR)	25.2	50.0	24.8	004	Complied
23	0.425	Neutral	Average (CISPR)	22.7	47.4	24.7	004	Complied
24	0.497	Neutral	Average (CISPR)	21.9	46.1	24.2	004	Complied
25	0.681	Neutral	Average (CISPR)	16.9	46.0	29.1	004	Complied
26	0.749	Neutral	Average (CISPR)	17.1	46.0	28.9	004	Complied

**TEST EQUIPMENT USED**

UL ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL
K0001	5 m Semi-Anechoic Chamber	N/A	19 Mar 2016	12
M1273	20 Hz to 26.5 GHz EMI Test Receiver	ESIB 26	19 Mar 2016	12
A1829	N-Type Pulse Limiter	ESH3-Z2	26 Mar 2016	12
C1419	3 m RF Cable	239-0088-3000	26 Mar 2016	12
A004	Single phase LISN	ESH3-Z5	27 Nov 2015	12
C1416	3 metre RF cable	239-0088-3000	21 Jan 2016	12
A2512	CMU 200 Radio Communication Tester	CMU 200	Calibration not required	N/A

## RADIATED EMISSIONS - TEST RESULTS

This test is covered by the scope of UL VS's UKAS Accreditation under ISO/IEC 17025: 2005.

### GENERAL INFORMATION

JOB NUMBER:	10809253JD01	TEST SITE ID:	Site 1
EUT:	INARI10-LTDN-2 and ADP-10BW B	TEMPERATURE:	25 °C to 25 °C
TEST ENGINEER:	Graeme Morris	RELATIVE HUMIDITY:	35 % to 35 %
DATE OF TEST:	18 Jun 2015	ATMOSPHERIC PRESSURE:	1020mb to 1020 mb
FIELD TYPE:	Electric Field	MEASUREMENT DISTANCE:	5, 3, 1.5 and 0.3 Metres
UNCERTAINTY:	< 1 GHz: $\pm 5.65$ dB > 1 GHz: $\pm 4.37$ dB	EQUIPMENT CLASS:	Class B
MEASUREMENT UNITS:	dB $\mu$ V/m	TEST ENVIRONMENT:	Test Site

### TEST SPECIFICATION DETAILS

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

REFERENCE:	ANSI C63.4: 2009
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### COMMENTS

Measurements below 1 GHz were performed in a semi-anechoic chamber at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

Pre-scans and final measurements above 1 GHz were performed in a semi-anechoic chamber at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

### DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

### EUT RELATED

OPERATING MODE:	Allocated
FUNCTION(S) MONITORED:	Not Applicable

### MEASUREMENT RESULTS

No.	Frequency (MHz)	Polarity	Detector	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Graph No.	Result
1	30.839	Vertical	Quasi-Peak	18.9	40.0	21.1	005	Complied
2	38.525	Vertical	Quasi-Peak	12.5	40.0	27.5	005	Complied
3	49.766	Vertical	Quasi-Peak	15.6	40.0	24.4	005	Complied
4	54.267	Vertical	Quasi-Peak	15.8	40.0	24.2	005	Complied
5	81.083	Vertical	Quasi-Peak	16.8	40.0	23.2	005	Complied
6	227.479	Horizontal	Quasi-Peak	25.5	46.0	20.5	005	Complied
7	1000 to 3000	Refer to Note 1 and 3					006	Complied
8	3000 to 31000	Refer to Note 2 and 3					007 to 012	Complied

### NOTES

1	The emission observed at 1.7 GHz was the second harmonic of GSM 850; therefore no further measurements were made.
2	No emissions were noted above the noise floor of the measurement system; therefore no further measurements were made.
3	Measurements below 1 GHz were completed in the following modes of operation: Allocated and Idle. From these measurements, the worst case mode was determined to be Allocated and measurements in the frequency range of 1 GHz and 31 GHz were completed in this mode only.

**TEST EQUIPMENT USED**

UL ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL
K0001	5 m Semi-Anechoic Chamber	N/A	19 Mar 2016	12
M1273	20 Hz to 26.5 GHz EMI Test Receiver	ESIB 26	19 Mar 2016	12
C1419	3 m RF Cable	239-0088-3000	26 Mar 2016	12
C1416	3 metre RF cable	239-0088-3000	21 Jan 2016	12
A2512	CMU 200 Radio Communication Tester	CMU 200	Calibration not required	N/A
C1411	1 metre RF cable	239-0088-1000	20 Jan 2016	12
C1410	1 m RF Cable	239-0088-1000	20 Jan 2016	12
A1933	3 GHz High Pass Filter for 5m SAC	AFH-03000	18 May 2016	12
A1834	3 dB Attenuator	8491B	05 Mar 2016	12
G0543	Amplifier 9kHz - 1GHz	310N	05 Jul 2015	03
A2105	Site 1 Turntable Controller	SCU	Calibration not required	N/A
A2107	30 MHz to 1 GHz Antenna Mast Controller	Positioning Controller - RSC	Calibration not required	N/A
A2102	1+ GHz Mast Controller	Controller NCD	Calibration not required	N/A
A2103	1+ GHz Tilt Antenna Mast	TAM 4.0-E	Calibration not required	N/A
A2106	Site 1 Turntable	TT 3.0-3t	Calibration not required	N/A
A259	30 to 1000 MHz Bi-log Antenna	CBL6111	08 Apr 2016	12
A2509	Below 1 GHz Antenna Mast	RSM 010	Calibration not required	N/A
C1502	8 m RF Cable	104A	21 Jan 2016	12
C1407	15 m RF Cable	262-0941-15M0	21 Jan 2016	12
C1425	AC Mains Conducted Emissions Cable	N/A	Calibration not required	N/A
A425	18 to 40 GHz Horn Antenna	3116	15 Mar 2016	36
A1994	NI GPIB to USB High Speed Adapter	GPIB-USB-HS	Calibration not required	N/A
C1171	k-type 2 meter cable	None	Calibrated before use	N/A
M1253	40 GHz Spectrum Analyser	8564E	24 Apr 2016	12

## RADIATED EMISSIONS - TEST RESULTS

This test is covered by the scope of UL VS's UKAS Accreditation under ISO/IEC 17025: 2005.

### GENERAL INFORMATION

<b>JOB NUMBER:</b>	10809253JD01	<b>TEST SITE ID:</b>	Site 1
<b>EUT:</b>	INARI10-LTDN-2 and ADP-10BW B	<b>TEMPERATURE:</b>	25 °C to 25 °C
<b>TEST ENGINEER:</b>	Graeme Morris	<b>RELATIVE HUMIDITY:</b>	35 % to 35 %
<b>DATE OF TEST:</b>	18 Jun 2015	<b>ATMOSPHERIC PRESSURE:</b>	1020mb to 1020 mb
<b>FIELD TYPE:</b>	Electric Field	<b>MEASUREMENT DISTANCE:</b>	5, 3, 1.5 and 0.3 Metres
<b>UNCERTAINTY:</b>	< 1 GHz: $\pm 5.65$ dB > 1 GHz: $\pm 4.37$ dB	<b>EQUIPMENT CLASS:</b>	Class B
<b>MEASUREMENT UNITS:</b>	dB $\mu$ V/m	<b>TEST ENVIRONMENT:</b>	Test Site

### TEST SPECIFICATION DETAILS

The EUT has been configured and tested in accordance with the methods and procedures detailed within the following basic standard:

**REFERENCE:** ANSI C63.4: 2009

### COMMENTS

Measurements below 1 GHz were performed in a semi-anechoic chamber at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

Pre-scans and final measurements above 1 GHz were performed in a semi-anechoic chamber at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

### DEVIATIONS FROM TEST SPECIFICATION

There were no deviations from the test configuration and measurement arrangements defined in the test specification (identified above).

### EUT RELATED

**OPERATING MODE:** Idle

**FUNCTION(S) MONITORED:** Not Applicable

### MEASUREMENT RESULTS

No.	Frequency (MHz)	Polarity	Detector	Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Graph No.	Result
1	30.494	Vertical	Quasi-Peak	18.7	40.0	21.3	013	Complied
2	33.882	Vertical	Quasi-Peak	18.3	40.0	21.7	013	Complied
3	49.281	Vertical	Quasi-Peak	15.7	40.0	24.3	013	Complied
4	51.912	Vertical	Quasi-Peak	15.6	40.0	24.4	013	Complied
5	228.825	Horizontal	Quasi-Peak	23.9	46.0	22.1	013	Complied
6	555.025	Horizontal	Quasi-Peak	22.0	46.0	24.0	013	Complied
7	1000 to 31000	Refer to Note 1					006 to 012	Complied

### NOTES

- Measurements below 1 GHz were completed in the following modes of operation: Allocated and Idle. From these measurements, the worst case mode was determined to be Allocated and measurements in the frequency of 1 GHz and 31 GHz were completed in this mode only.

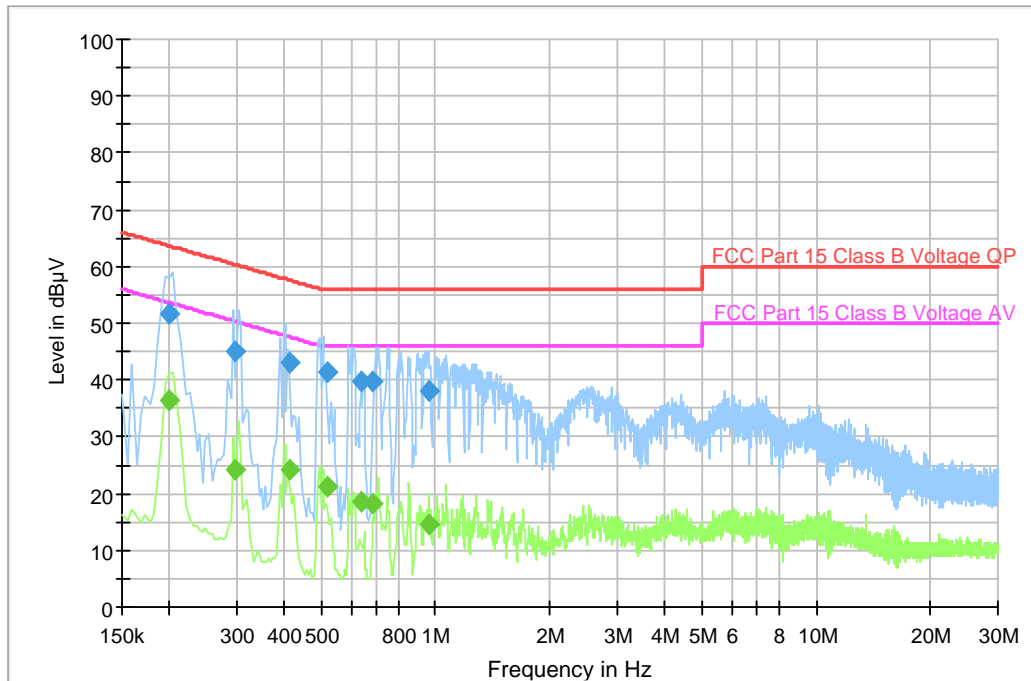
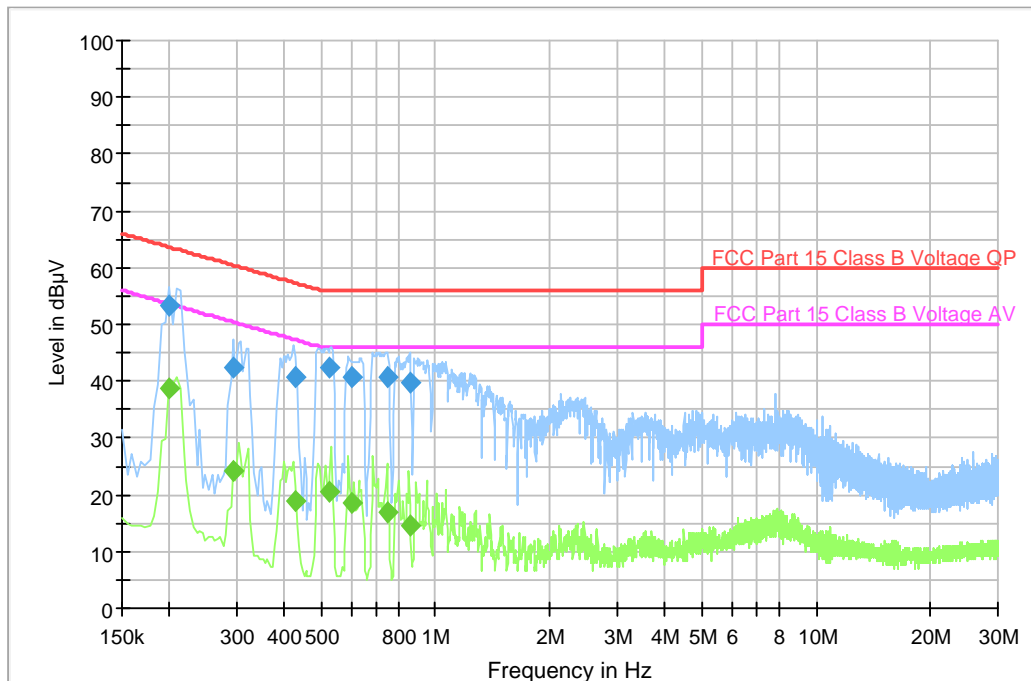
**TEST EQUIPMENT USED**

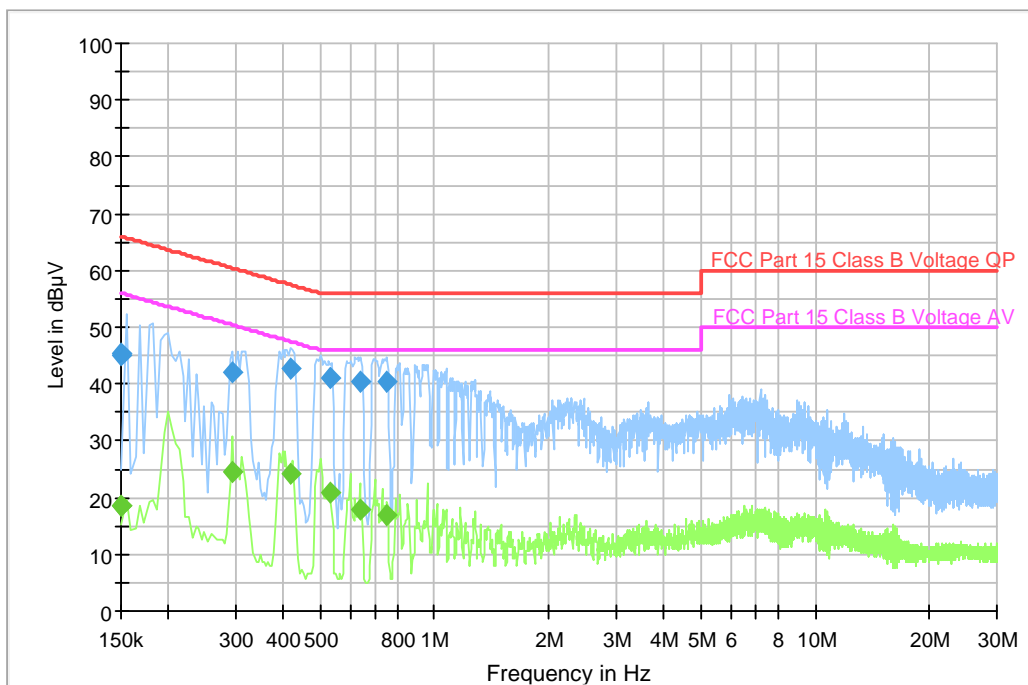
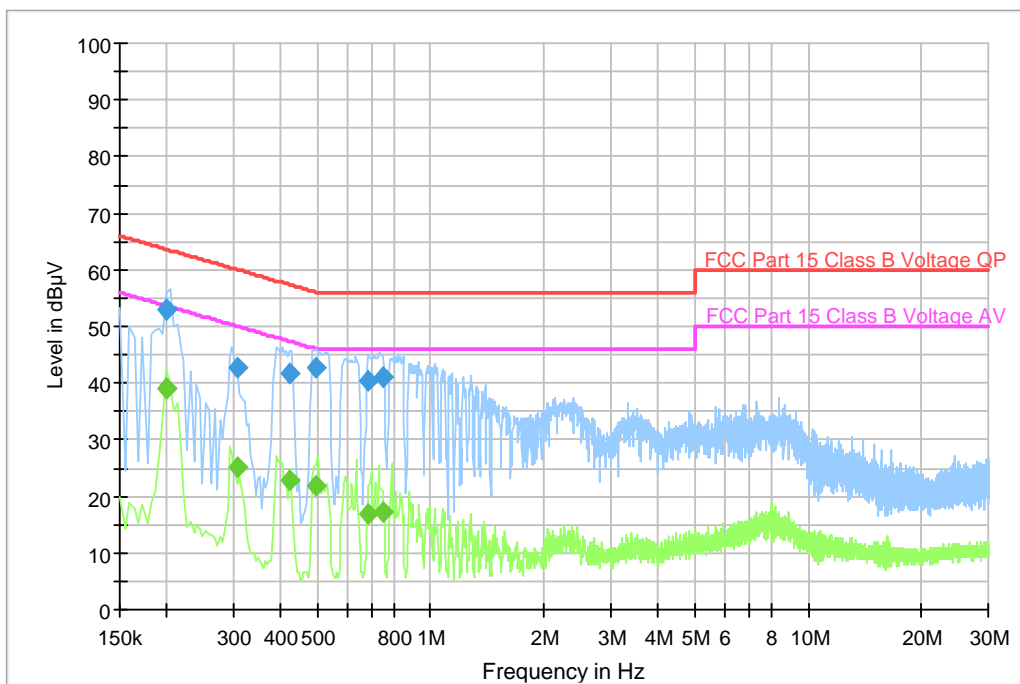
UL ID	INSTRUMENT DESCRIPTION	MODEL NUMBER	CALIBRATION DUE	INTERVAL
K0001	5 m Semi-Anechoic Chamber	N/A	19 Mar 2016	12
M1273	20 Hz to 26.5 GHz EMI Test Receiver	ESIB 26	19 Mar 2016	12
C1419	3 m RF Cable	239-0088-3000	26 Mar 2016	12
C1416	3 metre RF cable	239-0088-3000	21 Jan 2016	12
A2512	CMU 200 Radio Communication Tester	CMU 200	Calibration not required	N/A
C1411	1 metre RF cable	239-0088-1000	20 Jan 2016	12
C1410	1 m RF Cable	239-0088-1000	20 Jan 2016	12
A1933	3 GHz High Pass Filter for 5m SAC	AFH-03000	18 May 2016	12
A1834	3 dB Attenuator	8491B	05 Mar 2016	12
G0543	Amplifier 9kHz - 1GHz	310N	05 Jul 2015	03
A2105	Site 1 Turntable Controller	SCU	Calibration not required	N/A
A2107	30 MHz to 1 GHz Antenna Mast Controller	Positioning Controller - RSC	Calibration not required	N/A
A2102	1+ GHz Mast Controller	Controller NCD	Calibration not required	N/A
A2103	1+ GHz Tilt Antenna Mast	TAM 4.0-E	Calibration not required	N/A
A2106	Site 1 Turntable	TT 3.0-3t	Calibration not required	N/A
A259	30 to 1000 MHz Bi-log Antenna	CBL6111	08 Apr 2016	12
A2509	Below 1 GHz Antenna Mast	RSM 010	Calibration not required	N/A
C1502	8 m RF Cable	104A	21 Jan 2016	12
C1407	15 m RF Cable	262-0941-15M0	21 Jan 2016	12
C1425	AC Mains Conducted Emissions Cable	N/A	Calibration not required	N/A
A425	18 to 40 GHz Horn Antenna	3116	15 Mar 2016	36
A1994	NI GPIB to USB High Speed Adapter	GPIB-USB-HS	Calibration not required	N/A
C1171	k-type 2 meter cable	None	Calibrated before use	N/A
M1253	40 GHz Spectrum Analyser	8564E	24 Apr 2016	12

## 8. GRAPHICAL TEST RESULTS

8.1. This section contains the graphical results for the measurements listed in Section 2.2. *Summary of Test Results* (above).

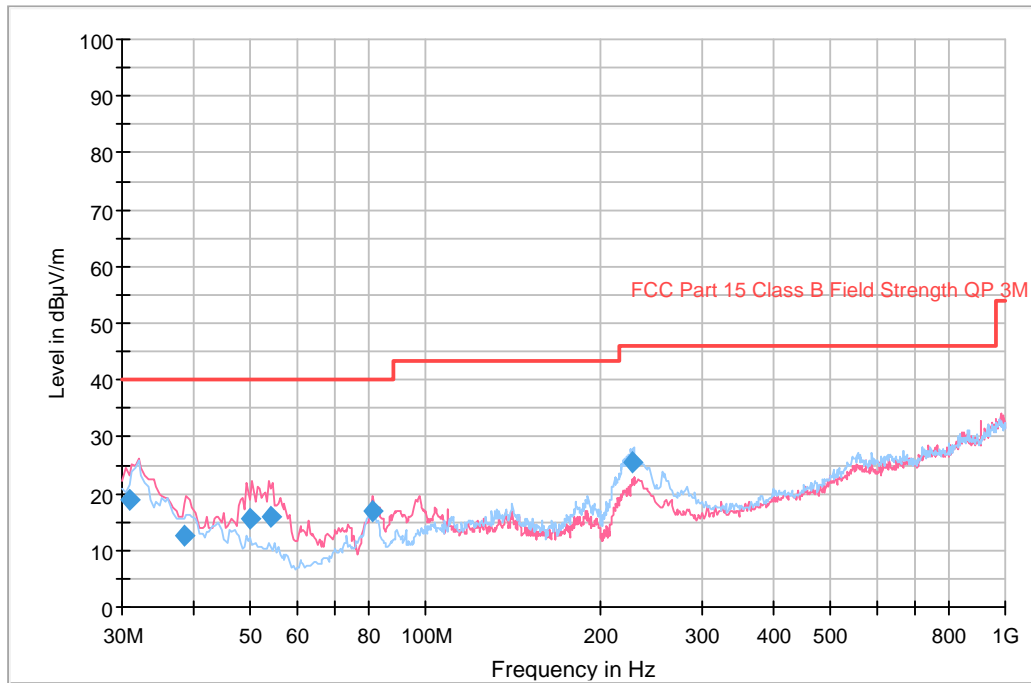
Graph Reference Number	Title
GPH\10809253JD01\001	Conducted Emissions – Idle – Live Final Measurements (0.15 MHz to 30 MHz )
GPH\10809253JD01\002	Conducted Emissions – Idle – Neutral Final Measurements (0.15 MHz to 30 MHz )
GPH\10809253JD01\003	Conducted Emissions – Allocated – Live Final Measurements (0.15 MHz to 30 MHz )
GPH\10809253JD01\004	Conducted Emissions – Allocated – Neutral Final Measurements (0.15 MHz to 30 MHz )
GPH\10809253JD01\005 to 012	Radiated Emissions – Allocated Pre-Scans and Final Measurements (30 MHz to 31 GHz )
GPH\10809253JD01\013	Radiated Emissions – Idle Final Measurements (30 MHz to 1 GHz )

**GPH\10809253JD01\001 - Conducted Emissions (0.15 MHz to 30 MHz) Live****GPH\10809253JD01\002 - Conducted Emissions (0.15 MHz to 30 MHz) Neutral**

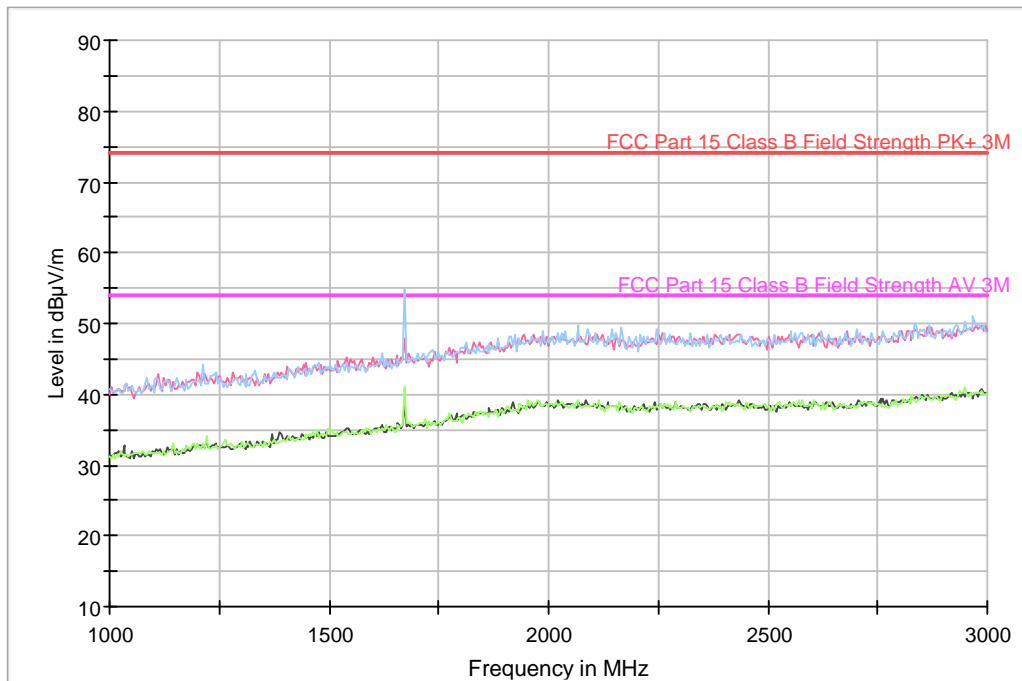
**GPH\10809253JD01\003 - Conducted Emissions (0.15 MHz to 30 MHz) Live****GPH\10809253JD01\004 - Conducted Emissions (0.15 MHz to 30 MHz) Neutral**



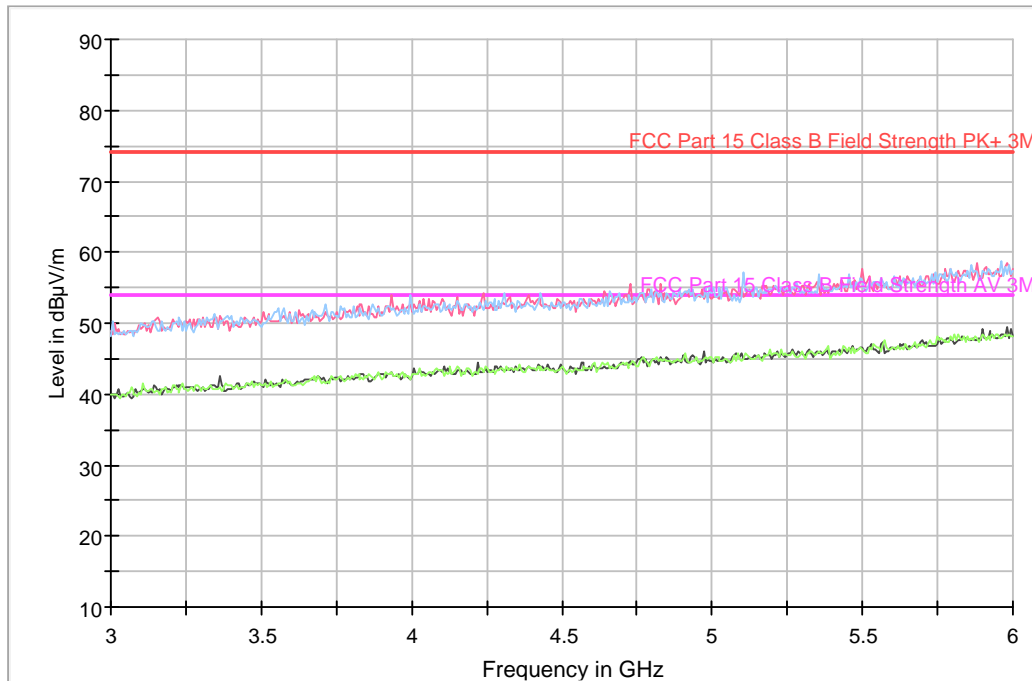
**GPH\10809253JD01\005 - Radiated Emissions ( 30 MHz to1 GHz)**



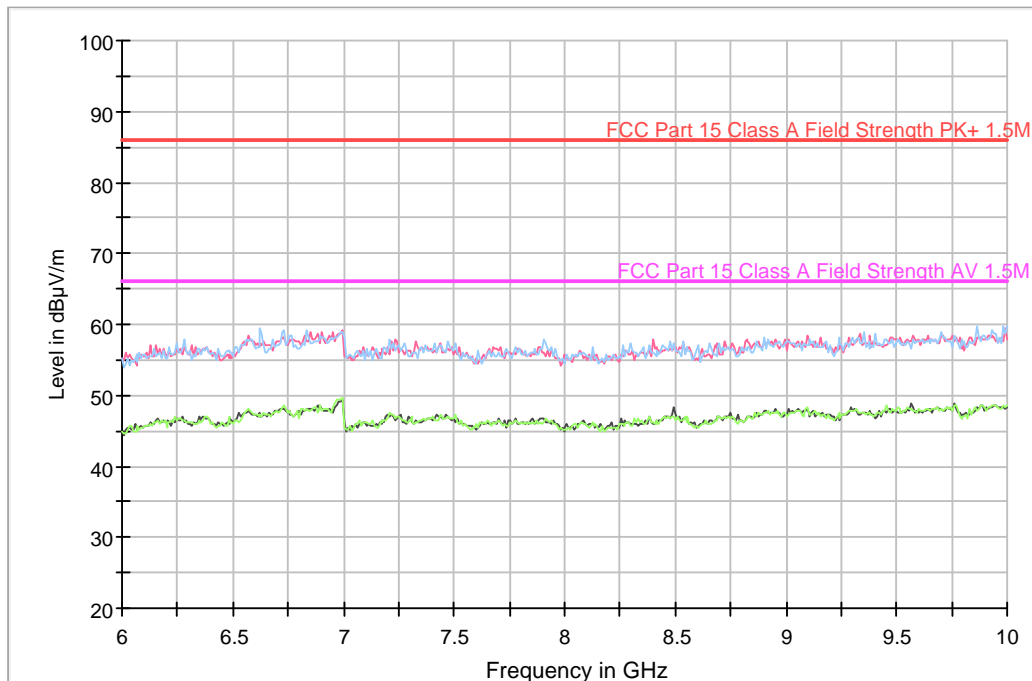
**GPH\10809253JD01\006 - Radiated Emissions (1 GHz to 3 GHz)**

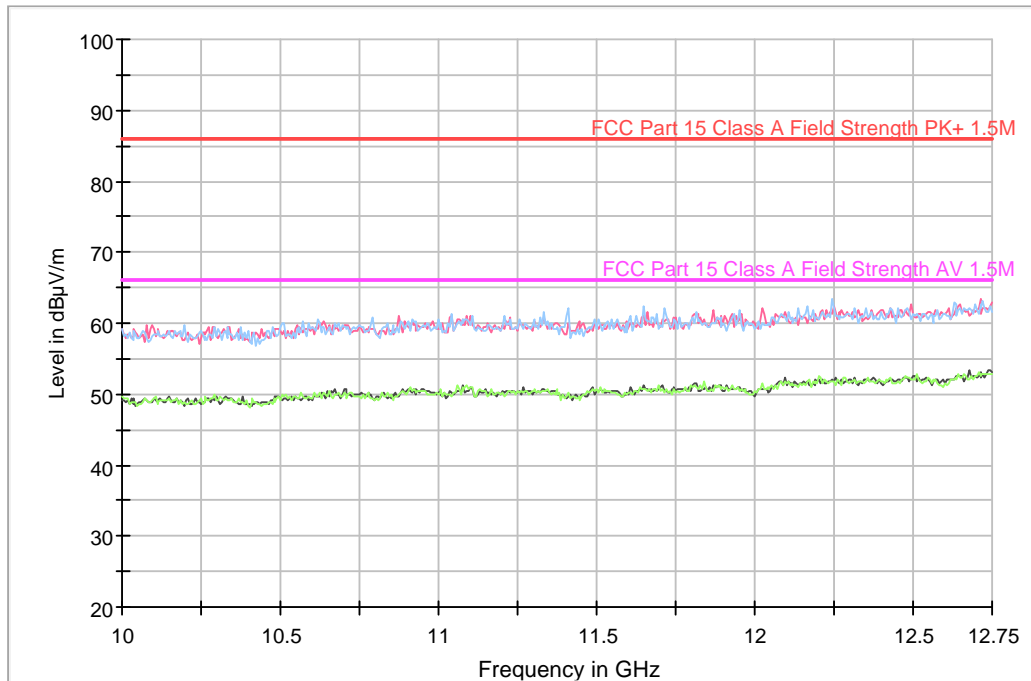
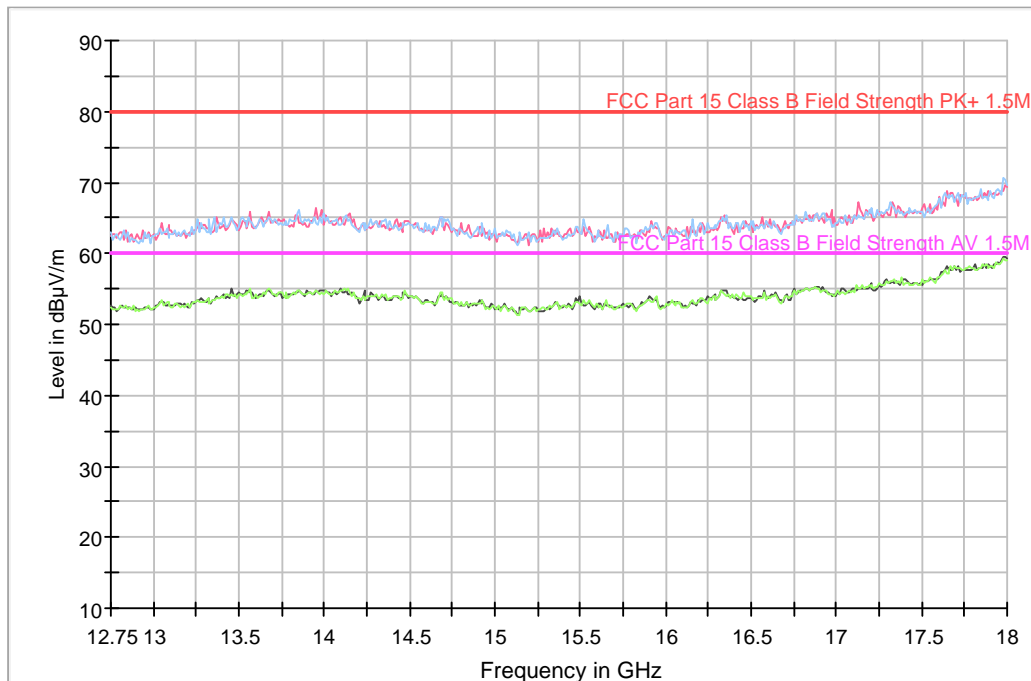


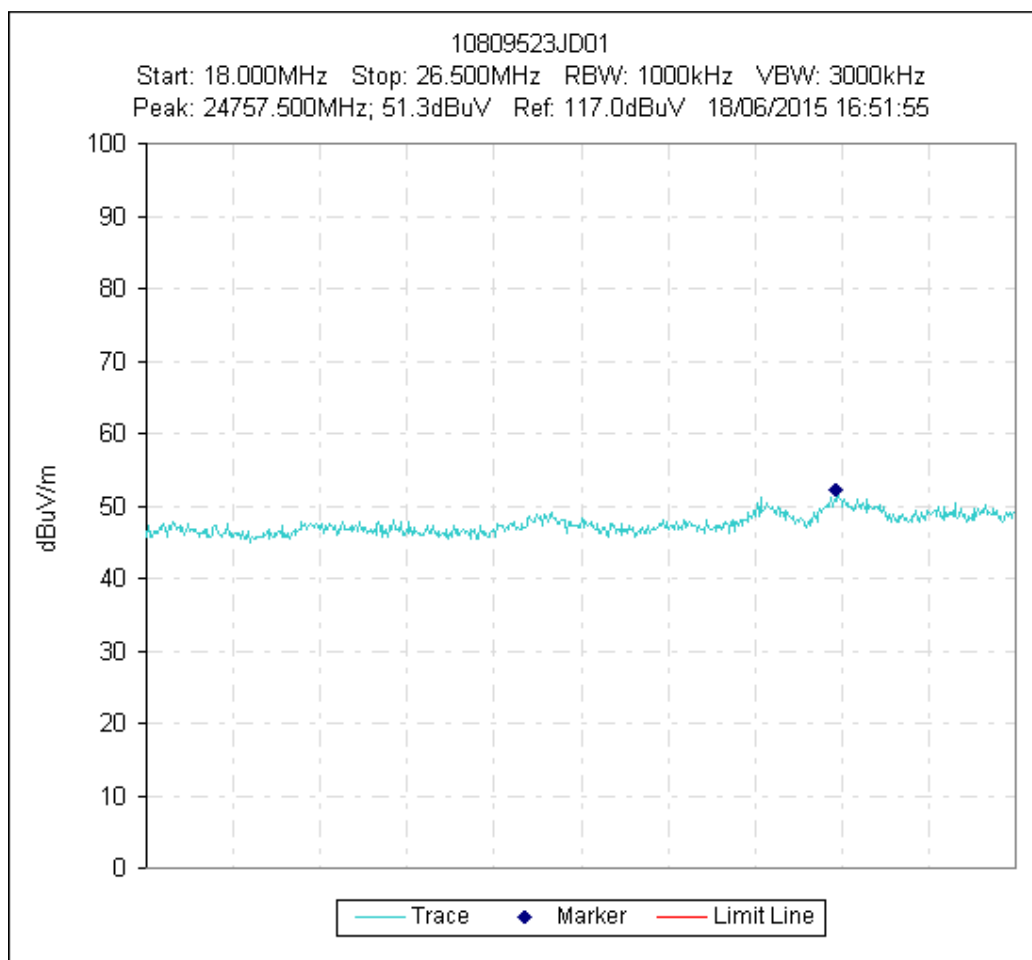
**GPH\10809253JD01\007 - Radiated Emissions ( 3 GHz to 6 GHz)**

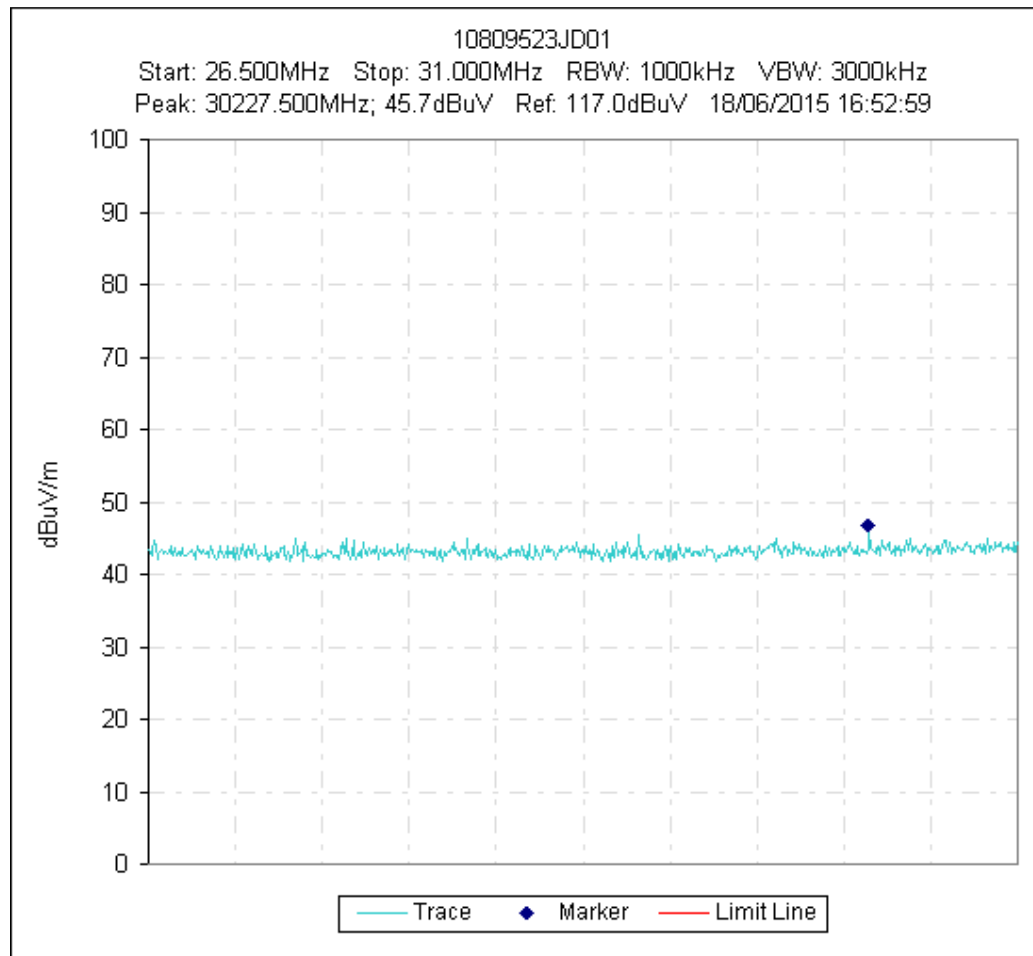


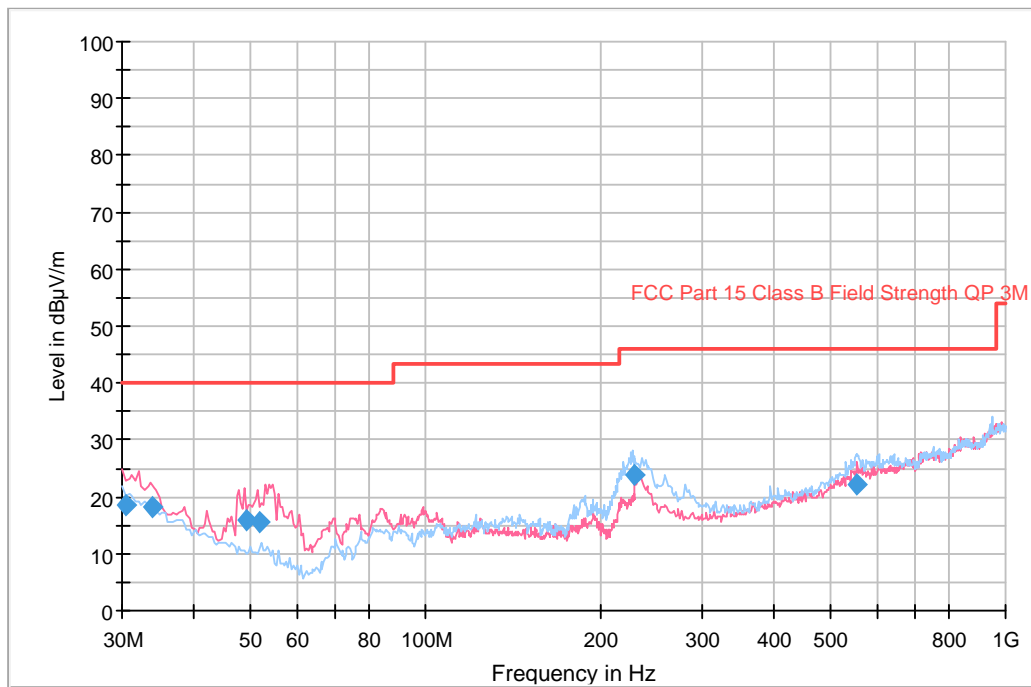
**GPH\10809253JD01\008 - Radiated Emissions ( 6 GHz to 10 GHz)**



**GPH\10809253JD01\009 - Radiated Emissions (10 GHz to 12.75 GHz)****GPH\10809253JD01\010 - Radiated Emissions ( 12.75 GHz to 18 GHz)**

**GPH\10809253JD01\011 - Radiated Emissions 18 GHz to 26.5 GHz)**

**GP1\10809253JD01\012 - Radiated Emissions 26.5 GHz to 31 GHz)**

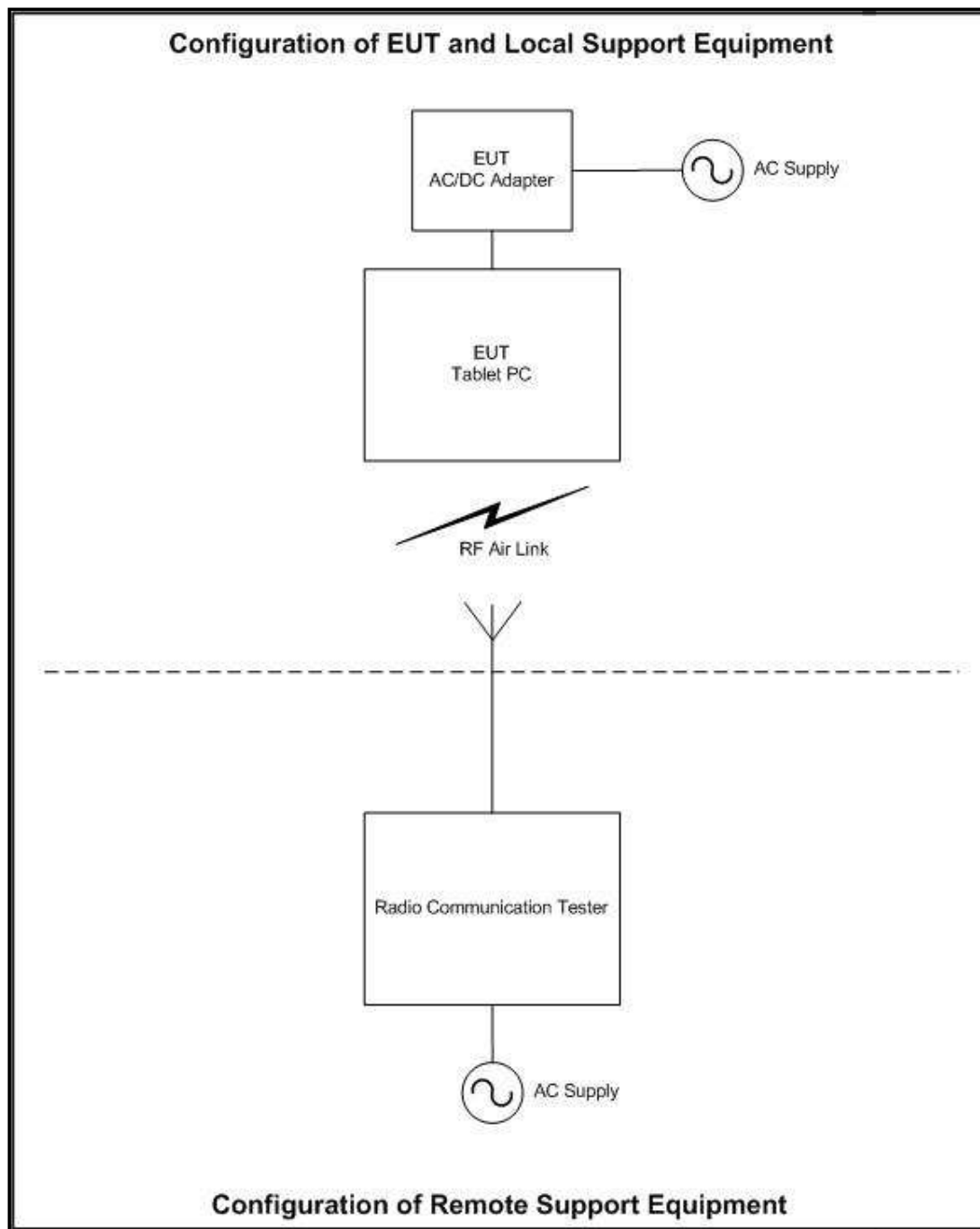
**GPH\10809253JD01\013 - Radiated Emissions ( 30 MHz to 1 GHz)**

## 9. TEST CONFIGURATION DRAWING

9.1. This section contains the Test Configuration Drawings for the measurements listed in Section 7: Measurements, Examinations and Derived Results.

Test Configuration Reference Number	Title
DRG\10809253JD01\001	Schematic Diagram of the EUT, Support Equipment and Interconnecting Cables used for the Test

**DRG\10809253JD01\001 - Schematic Diagram of the EUT, Support Equipment and Interconnecting Cables used for the Test**





## 10. REPORT REVISION HISTORY

10.1. This section contains the report revision history.

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	-	-	Initial Version.
2.0	1, 7 & 8	-	Added wireless module data. Amended EUT data.
3.0	8	-	Amend software version reference.
4.0	-	-	Updated to reflect reference to RSS Gen Issue 4.
5.0	-	-	References to RSS Gen Issue 4 moved to report UL-EMC-RP10809253JD01B.